

## II. Rejections of Claims in the Parent Application

### a. Independent Claims 1 and 8 (formerly claims 41 and 48)

Independent claims 1 and 8 correspond to claims 41 and 48 in the parent application. These claims were rejected in the parent application under 35 U.S.C. §103 as purportedly being obvious over the admitted prior art in view of either U.S. Patent No. 5,819,310 (Vishlitzky) or U.S. Patent No. 5,799,304 (Miller). These rejections are respectfully traversed.

#### i. Rejection over the admitted prior art in view of Vishlitzky

The Office Action concedes that the admitted prior art does not disclose the “dynamic configuration table being indexed by the logical volume address,” as recited in claim 41 (now claim 1). However, according to the Office Action, Vishlitzky shows a correspondence 27 indexed by logical volume. The Office Action asserts that a person of ordinary skill in the art would have been motivated by Vishlitzky to index the table shown in the admitted prior art of Figure 5 by logical volume for the purpose of being able to more quickly access the data in the table when accessing the table via the logical volume. Applicant respectfully disagrees.

#### Discussion of Vishlitzky

The correspondence 27 of Vishlitzky defines how device controllers will respond to read commands for various logical volumes (Col. 6, lines 46-54). For example, correspondence 27 in Figure 1 establishes an “RP1” process for Logical Volumes A and C and an “RP0” process for Logical Volumes B and D. In other words, correspondence 27 dictates that drive controller 20 will read all of the data in Logical Volumes A and C from the attached physical disk drive (i), but will prevent the data from Logical Volumes B and D from being read by the attached physical disk drive (i) (see Fig. 1; Col. 6 line 54 - Col. 7, line 1, and the table of Col. 7). Correspondence 27 is indexed by logical volume, since the correspondence is designed to allow a drive controller to select an appropriate reading process in response to a read command identifying a particular logical volume. Thus, correspondence 27 is indexed by logical volume because that is the way it is accessed.

*Discussion of the admitted prior art of Figure 5*

In contrast to the correspondence 27 of Vishlitzky, which is indexed by logical volume since that is the way it is accessed, the table shown in the admitted prior art of Figure 5 is indexed by target number, because that is the way in which that table is accessed. For example, at page 12, lines 1-3, it is explained that the disk adapters periodically poll the globally accessible dynamic configuration table (GDAT) to determine whether changes have been made to the entries for “any of its targets.”

*No motivation to combine the references*

The Office Action states that “at the very least, Vishlitzky shows that indexing [by] logical volume was known at the time of filing.” However, the fact that a particular type of table is indexed by logical volume does not suggest that an entirely unrelated table should be indexed by logical volume. The table of the admitted prior art is indexed not by logical volume, but by target number, and is indexed in this manner because the table is accessed by target number. A person of ordinary skill in the art would not have been motivated to index the table of the admitted prior art by logical volume, because that is not how the table is accessed. Applicant emphasizes that the inventive concept of claims 1 and 8 is not in recognizing that the table should be indexed in the way it is accessed, but rather in recognizing that the table may be accessed in a way that diverges from the prior art. Prior to Applicant’s invention, no teaching existed to access the type of dynamic assignment table claimed by logical volume.

Although the Office Action asserts that a person of ordinary skill in the art would have found it obvious to index the table shown in the admitted prior art of Figure 5 by logical volume for the purpose of being able to more quickly access the data in the table when accessing the table via the logical volume, there is neither any teaching that the dynamic assignment table of the admitted prior art is accessed by logical volume, nor any teaching in Vishlitzky that the reason the correspondence 27 is organized by logical volume is for the purpose of enabling quick access. Pursuant to MPEP § 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in knowledge generally available to one of ordinary skill in the art. Thus, it is respectfully asserted that the Office Action failed to set forth a prima facie case of obviousness with respect to claims

41 and 48 (now claims 1 and 8) over the admitted prior art in view of Vishlitzky, because there is no motivation to combine the references. No motivation is found in the references themselves. Thus, although the Examiner makes no indication that knowledge generally available in the art is being relied on for the motivation to modify the table of the admitted prior art that is indexed and accessed by target number so that it is instead indexed by logical volume, it appears that such general knowledge is being relied upon. Applicant respectfully traverses any assertion that such a motivation is in the knowledge generally available to one of ordinary skill in the art. Thus, if this rejection is to be maintained, the Examiner is requested to cite a reference or provide an affidavit to support the alleged motivation pursuant to MPEP §2144.03.

ii. Rejection over the admitted prior art in view of Miller

The Office Action concedes that the admitted prior art does not disclose the “dynamic configuration table being indexed by the logical volume address,” recited in claim 41 (now claim 1). However, according to the Office Action, Miller refers to a data structure (lines 6-9 of column 9) that may be varied according to design choice. The Office Action asserts that a person of ordinary skill in the art would have found it reasonable to vary the table shown in the admitted prior art of Figure 5 according to design choice to index the table by logical volume.

As the Examiner concedes, the admitted Prior Art of Figure 5 does not disclose the “dynamic configuration table being indexed by the logical volume address,” as recited in independent claims 41 and 48 (now 1 and 8). Significantly, the Office Action also does not allege that this feature is disclosed in Miller or any other prior art reference of record. Rather, the Office Action cites Miller merely for the proposition that a particular data structure disclosed therein (which is not related in any way to the dynamic configuration table of the admitted prior art) may vary according to design choice. Based upon this general statement in Miller, the Office Action concludes that “a person of ordinary skill in the art would have found it reasonable to vary the data structure in the admitted “Prior Art” of Figure 5 according to design choice.” Applicant respectfully asserts that this improper.

To establish a prima facie case of obviousness, the prior art references relied upon must teach or suggest all of the claim limitations (MPEP §706.02(j)). The general statement about the particular data structure in Miller being a matter of design choice provides absolutely no teaching or suggestion that would have motivated one of ordinary skill in the art to modify the dynamic

configuration table in the admitted prior art in any way. In this respect, the assertion in the Office Action that one of ordinary skill in the art would have found it “reasonable” to vary the configuration table in the admitted prior art does not apply the proper test for obviousness. To establish a prima facie case of obviousness, the Examiner must point to some motivation in the prior art of record to modify the admitted prior art configuration table to arrive at the claimed invention. Applicant respectfully asserts that the general statement in Miller provides no such teaching or suggestion, and would not have motivated a person of ordinary skill in the art to take any action whatsoever with respect to the configuration table in the admitted prior art. Applicant respectfully asserts that it is improper for the Examiner to not rely upon any prior art reference of record as specifically disclosing the feature recited in Applicant’s claim relating to a dynamic configuration table that is indexed by a logical volume address and to simply assert that modifying the admitted prior art system is a matter of design choice.

Further, Applicant respectfully asserts that the feature at issue is not a matter of aesthetic design choice, and thus MPEP §2144.04 (previously cited by the Examiner in the rejection of these claims) is inapplicable. The portion of MPEP §2144.04 directed to “Aesthetic Design Changes” states that “matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art.” The indexing of the configuration table by logical volume address is not a matter of ornamentation, and thus this feature can be relied on to patentably distinguish the claimed invention from the prior art. Furthermore, MPEP §2144.04 specifically provides that “[i]f the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection.” Applicant pointed out the criticality of the indexing feature to the claimed invention in the Amendment mailed on March 5, 2001, as reproduced below (page 11, lines 6-19 of March 5, 2001 Amendment):

At page 7 of the Office Action, the Examiner cites a section in Applicant’s specification that purportedly emphasizes the “non-criticality” of indexing the dynamic configuration table by the logical volume address, which the Examiner believes supports the assertion that the modification made to the admitted prior art system is simply a matter of design choice and therefore obvious under §103. Applicant disagrees on both the facts and the law. First, the cited portion of Applicant’s specification specifically states that an advantage of indexing the LDATs and the GDATs by logical volume is that “each includes only one entry for each logical volume (i.e., one entry per DV#) stored in the system, even if the

system is configured to maintain several mirrored versions of the same logical volume.” Thus, contrary to the Examiner’s assertion, Applicant’s specification actually teaches that this feature is advantageous. The assertion in the following line that other aspects of the present invention are not limited in this respect, such that the dynamic assignment table can be indexed in a different way, does not detract from the advantages provided by this feature of the present invention that is recited in claims 41 and 48, and does not render that feature obvious.

Thus, Applicant respectfully asserts that the Examiner’s application of MPEP §2144.04 in support of the rejection of claim 41 under 35 U.S.C. §103(a) is improper.

In sum, Applicant continues to believe that (1) the Office Action failed to set forth a prima facie case of obviousness of claim 41 and 48 (now claims 1 and 8) because the cited references do not teach all of the claim limitations; and (2) it is not proper to rely on MPEP §2144.04 in support of the rejection because the key limitation is not a matter of ornamentation and is a critical limitation. Accordingly, claims 1 and 8 are believed to be in condition for allowance. Claims 2-7 and 9-14 depend from claims 1 and 8, respectively, and are allowable for at least the same reasons as their respective base claims.

b. Independent Claims 15 and 20 (formerly claims 55 and 61)

Independent claims 15 and 20 correspond to claims 55 and 61 in the parent application. These claims were rejected in the Office Action under 35 U.S.C. §103 as purportedly being obvious over the admitted prior art. This rejection is respectfully traversed.

With respect to claim 55 (now claim 15), the Office Action states: “[t]he admitted prior art does not teach controllers having the claimed “means [] for automatically updating the local table in [] one of the first and second controllers based upon the information stored in the global table [responsive to the one of the first and second controllers being powered up]. In the admitted prior art, the use of the service processor 148 is required. See page 18, lines 16-22.” The Office Action states that “the claim as drafted is not patentable over the admitted “Prior Art” because providing an automatic means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art,” citing MPEP §2144.04.

Applicant respectfully disagrees with the assertion that the service processor in the prior art is used to accomplish the same result, because the service processor is not used in the admitted prior art to update the local table in one of the first and second controllers based upon

the information in the global table *responsive to the one of the first and second controllers being powered up*. The Examiner's attention is directed to the following passage of Applicant's specification, which begins at line 9 and ends at line 20 of page 21:

In these cases, if each disk adapter were to execute a power-up routine that automatically downloaded information from the global dynamic table and began operating, problems could be encountered because each disk adapter would be relying upon invalid data for specifying its dynamic assignments. To avoid that problem, on power up, the disk adapters in the existing system do not automatically download information from the globally accessible dynamic configuration table. Rather, in response to a detected inaccuracy in the data in their local dynamic configuration tables, each disk adapter in the existing system simply initializes its local table to reflect no dynamic resource assignments. If it is determined that the global dynamic assignment table does, in fact, contain accurate information (for example, when a new disk adapter is powered up in a currently operating system), then the service processor 148 (Figure 1) is employed to download that information to the local table of the disk adapter. As stated above, this is a time consuming process that interrupts the normal operation of the storage system.

Hence, it should be appreciated that when the service processor is used to update the local table in one of the first and second controllers based upon the information in the global table, it does not occur in response to the one of the first and second controllers being powered up, but rather, occurs in response to a determination that the global dynamic assignment table includes accurate information. In fact, in the prior art system, if the service processor were used to update the local table in response to power up, "problems could be encountered because each disk adapter would be relying upon invalid data for specifying its dynamic assignments" (page 21, lines 11-12).

In view of the foregoing, claim 15 does not simply recite an automatic means to replace a manual activity that accomplishes the same result, contrary to the assertion in the Office Action.

In addition, it is noted that the Office Action appears to be applying a "*per se*" rule that providing an automatic means to replace a manual activity is not patentable. The Federal Circuit has held that it is improper to rely upon any purported *per se* rule of unpatentability. See e.g., *In re Ochiai*, 37 USPQ2d 1127, 113 (Fed. Cir. 1995) ("the use of *per se* rules ... flouts section 103 and the fundamental case law applying it."). Consequently, to support a rejection under §103, the Examiner must specifically identify *from the prior art* the motivation to make the claimed

invention. There is an abundance of Federal Circuit cases reversing rejections for failure to do so. *See e.g., In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999) (reversing rejection because specific motivation in the prior art not identified).

The MPEP § 2144.04 that the Examiner relies upon for the proposition that it is unpatentable to automate a manual activity is based on *In re Venner* 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958). Since the facts in *Venner* are completely unrelated to the issues presented in the present application, it is improper to rely on *Venner* in any way as a basis for rejection the claims in the present application.

In fact, the Board of Patent Appeals and Interferences recently reversed a strikingly similar rejection of claims based on the Examiner's reliance on *Venner* for the proposition that providing an automatic means to replace a manual activity is not patentable. *Ex Parte Richard Brouillet, Jr.* (Bd. Pat. App. & Inter. 2001), copy enclosed. Specifically, the Board stated that:

In the present case, unlike in *Venner*, the examiner has not provided a reference which discloses a high speed rotary power tool, let alone one which is used for cleaning glass. The examiner has merely relied upon a *per se* rule that providing a mechanical or automatic means to replace manual activity which has accomplished the same result is unpatentable. As stated by the Federal Circuit in *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995), "reliance on *per se* rules of obviousness is legally incorrect and must cease." Moreover, as correctly pointed out by the appellant (brief, pages 4-5), the examiner has not established that manual rubbing accomplishes the same result as a rotary power tool.

In view of the foregoing, it is respectfully asserted that the rejection of claim 55 (now claim 15) over the cited references was improper, and that claim 15 patentably distinguishes over the prior art of record. Claims 16-19 depend from claim 15 and are allowable for at least the same reasons.

With respect to claim 61 (now claim 20), the Office Action references the comments made for claim 55 (now claim 15). For reasons similar to those set forth above, the admitted prior art does not teach or suggest automatically updating a local table in the one of first and second controllers based upon information stored in a global table, when one of the first and second controllers is powered up. In view of the foregoing, it is respectfully asserted that claim 20 patentably distinguishes over the cited references. Claims 21-23 depend from claim 20 and are allowable for at least the same reasons.